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Cc: [ANDERSON Jim M](#)
Subject: RE: Biota DQOs
Date: 06/06/2007 10:12 AM

Eric,

Just one note on reducing uncertainties for biota COIs. One of the uncertainties I noticed when reviewing the Round 2 report was the lack of data in higher trophic level aquatic organisms like fish for compounds that were identified in high concentrations in other media. These included butyl tins and phthalates - these were also identified in various areas in the report by the LWG. If I recall correctly, we did not analyze for butyl tins in Round 1 fish tissue, probably because we didn't have a good handle on COIs. However, these were identified as bioaccumulators in other tissue, and risk estimates based on BSAFs indicate they could be bioaccumulating in fish (see LWG report). There also was a problem with the phthalate analysis in Round 1 tissue that resulted in elevated detection limits - something that I believe has been corrected in subsequent FSPs (method change). These showed up at elevated concentrations in certain areas - esp. around RM 4 (T-4 and Schnitzer area) and Willbridge Cove (e.g. the smallmouth bass sample from round 1 and select clam and sediment samples).

Given this, I would advocate adding phthalates and butyl tins to the fish biota sampling you are planning in order to reduce uncertainty for the risk assessment - esp. in select areas. Sorry if you have already been through this issue and made a decision.

Hope all is well on the project :-). I will probably start jumping back in here on a limited basis.

-Jennifer

-----Original Message-----

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Subject: Biota DQOs

All

The need for additional biota tissue has been identified as a key data gap for the Portland Harbor Site. In order to ensure that this data can be collected this year as part of Round 3B, we have agreed to provide the LWG with direction on the rationale for additional biota tissue and some sense of the scale (species and approximate numbers) and geographic scope of this effort by June 8, 2007. We are scheduled to discuss biota DQOs on Monday morning and revisit as necessary at next week's TCT. The summary provided below and attached documents are to facilitate this discussion.

General DQOs:

The following eight initial objectives, some of which overlap, have been identified for biota tissue:

Reduce uncertainties in COI tissue concentrations.
Characterize upstream tissue concentrations.
Support the development of sediment PRGs based on tissue concentrations through the application of the food web model or BSAFs. Reduce uncertainties in the human health risk assessment. Reduce uncertainties in the ecological risk assessment. Support the evaluation of risks associated with contaminated groundwater discharges and TZW. Source identification. Develop a baseline data set for the purpose of performance monitoring.

Recognizing overlap of the above objectives and the difficulty of collecting tissue samples that are directly associated with contaminated groundwater discharges, we have further refined the list of DQOs into the following three items.

1) Reduce uncertainties in COI tissue concentrations. This includes sampling to ensure that the full range of contaminant sources are captured in the tissue sampling (source identification), refine

uncertainties in the HHRA and ERA and help develop a baseline set of data.

2) Support the development of sediment PRGs based on tissue concentrations through the application of the food web model or BSAFs. Refining uncertainties in COI tissue concentrations will support this effort.

3) Characterize upstream tissue concentrations.

Targeted Species List:

To support the HHRA and reduce uncertainties in COI tissue concentrations, the following species have been identified for collection within the Portland Harbor Study Area:

Bivalves: Clams were collected between RM 2 and RM 11 and within Swan Island Lagoon. Although this coverage is generally adequate, additional sampling may be required adjacent to specific sources and between RM 11 and 12 and between RM 1 and 2 and in Multnomah Channel. Additional sampling may also be required near areas of PAH contamination where we have no clam tissue such as downstream of GASCO, downstream of RM 4.5 along the west bank, and in the vicinity of Cargill and the historic MGP contingent on a review of the Round 3A upstream sediment and downstream of Willamette Cove.

Smallmouth Bass: This is a key species for both the HHRA (popular sport fish with some of the highest levels of bioaccumulative chemicals such as PCBs and DDT metabolites) and the food web model (high trophic level predator). Although we have composite samples collected on a river mile by river mile basis, we do not have samples collected in the vicinity of all known bioaccumulative chemical sources. This information is needed to ensure that the food web model and human health risk assessments fully capture the range of contaminant tissue concentrations in Portland Harbor.

Carp: This is a key species for the HHRA because it is a popular subsistence fish and has some of the highest levels of bioaccumulative chemicals such as PCBs and DDT metabolites. During Round 1, carp composites were collected between RM 3 and RM 6 and between RM 6 and 9. Carp should also be collected between RM 0 and 3, in the upper end of Multnomah Channel and between RM 9 and 12.

Black Crappie: This is a key species for the HHRA and FWM because it represents a good water column species. In addition, a range of chlorinated pesticides have been detected in this species. During Round 1, whole body black crappie composites were collected only in the vicinity of Terminal 4, slip 3 and in the vicinity of the Portland Shipyard. Further sampling to capture a broader range of sampling locations and contaminant sources is required.

Sculpin: Sculpin are considered a key species for the evaluation of contaminant uptake from localized sources and for the food web model. 26 sculpin were collected from the study area.

Targeted Contaminant List:

Tissue samples should focus on the chemicals that are being modeled in the food web model (e.g., PCBs and DDT), or which may drive cleanup levels (e.g., PAHs in clam tissue) or where questions remain about the extent of contaminant uptake by fish tissue (e.g., VOCs, in tissue near known VOC sources such as Arkema, GASCO and Rhone Poulenc; lower detection limits for PAHs and PBDEs). Further discussion is required regarding whether to limit the analyte list.

Upstream Sampling:

The upstream sampling completed to date included field clam and laboratory lumbriculus tissue collected at RM 19, juvenile chinook salmon collected at RM 18 and smallmouth bass and brown bullhead collected between RM 21 and 24 and RM 29 and 32, adult lamprey and chinook salmon collected at Willamette Falls. Upstream sampling should target the existing data collection areas (RM 21 - 24 and RM 29 - 32) and species list identified above (clams, small mouth bass, carp, black crappie and sculpin).

Individual vs. Composites

Whole body samples are usually used for the ERA and HHRA. However, individuals may be needed to support the FWM. Further discussion required on this topic

I look forward to further discussion on Monday

(See attached file: Upstream Biota DQOs 1Jun07.doc)(See attached file: 20070601 Summary of Human Health Round 3 Biota Data Gaps Conference Call.doc)